

Mobility Element





Mobility Element

Purpose

To improve mobility through development of a balanced, multi-modal transportation network.

Introduction

An overall goal of the Mobility Element is to further the attainment of a balanced, multi-modal transportation network that gets us where we want to go and minimizes environmental and neighborhood impacts. A balanced network is one in which each mode, or type of transportation is able to contribute to an efficient network of services meeting varied user needs. For example, the element contains policies that will help walking become more viable for short trips, and for transit to more efficiently link highly frequented destinations, while still preserving auto-mobility. In addition to addressing walking, streets, and transit, the element also includes policies related to: regional collaboration, bicycling, parking, goods movement, and other components of our transportation system. Taken together, these policies advance a strategy for congestion relief and increased transportation choices in a manner that strengthens the City of Villages land use vision.



Mi Pueblo Pilot Village
Estudio Cruz



THE CITY OF SAN DIEGO General Plan Mobility Element

Existing and Planned Park and Open Space

Dedicated and designated planned open space and park information represented here may not be the current land use, but a best estimate based upon the SANDAG and SanGIS generalized existing land use data and City of San Diego park and open space data.

Planned Transit Service

Planned higher frequency rail (Trolley and Coaster) and Bus Rapid Transit (BRT) routes represent the updated 2006 revenue constrained corridor and regional transit service from the adopted San Diego Association of Governments 2030 Regional Transportation Plan and the SR-56 transit route from the unconstrained network. The BRT routes and the Trolley Mid-Coast route represent new transit routes. The existing rail routes represent improved operating frequencies above the existing frequencies. Each route is planned to operate every 15 minutes or better during the morning and evening commute periods except for the Coaster, which is planned to operate every 20 minutes.

Existing Transit Service

Existing transit service represents the adopted Metropolitan Transit System, 2006 Comprehensive Operational Analysis transit network. Higher frequency bus and trolley service represents the urban network of single routes traveling on key corridors every 15 minutes or better. Lower frequency service represents the remaining bus transit network.

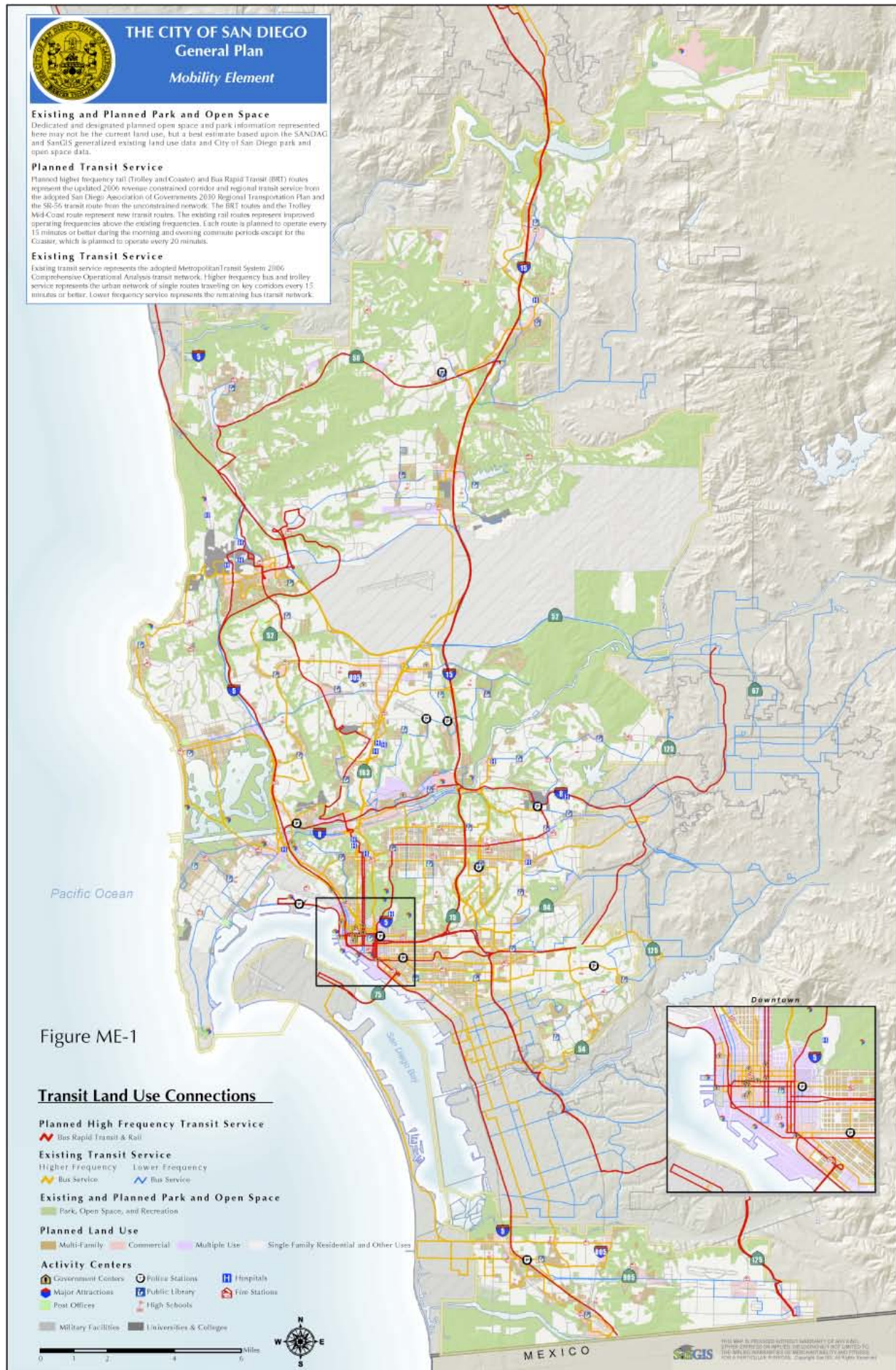


Figure ME-1

Transit Land Use Connections

Planned High Frequency Transit Service

Bus Rapid Transit & Rail

Existing Transit Service

Higher Frequency Lower Frequency

Bus Service Bus Service

Existing and Planned Park and Open Space

Park, Open Space, and Recreation

Planned Land Use

Multi-Family Commercial Multiple Use Single-Family Residential and Other Uses

Activity Centers

Government Centers Police Stations Hospitals
Major Attractions Public Library Fire Stations
Post Offices High Schools
Military Facilities Universities & Colleges

0 1 2 4 6 Miles



MEXICO



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The Mobility, and Land Use and Community Planning elements of the General Plan are closely linked. The Land Use and Community Planning Element identifies existing uses and planned land uses, and the Mobility Element identifies the proposed transportation network and strategies which have been designed to meet the future transportation needs generated by the planned land uses. The integration of transit and land use planning is illustrated by the Transit/Land Use Connections Map (see Figure ME-1). This map identifies existing and community plan designated activity centers, commercial centers and corridors, and multifamily residential areas that are along the region's higher frequency existing and planned transit services.

Implementation of the City of Villages growth strategy is dependent upon the close coordination of land use and transportation planning. The strategy calls for redevelopment, infill, and new growth to be targeted into compact, mixed-use, and walkable villages that are connected to the regional transit system. Villages should increase personal transportation choices and minimize transportation impacts through design that pays attention to the needs of people traveling by transit, foot, and bicycle, as well as the automobile. Focused development and density adjacent to transit stops and stations helps make transit convenient for more people, and allows for a more cost-effective expansion of transit services. Housing in mixed-use commercial areas provides opportunities for people to live near their place of work, and helps support the use of neighborhood shops and services. As such, the City of Villages land use pattern is a transportation, as well as a land use strategy.

Communities also benefit from the village transportation/land use strategy as a result of: the overall increase of transit service; street and freeway improvements; increased accessibility to regional employment areas; citywide improvements to foster walking and bicycling; and, citywide multi-modal transportation improvements in conjunction with development.

The Mobility Element is a part of a larger body of plans and programs that guide the development and management of our transportation system.

- The Regional Transportation Plan (RTP), prepared and adopted by the San Diego Association of Governments (SANDAG) is the region's long-range mobility plan. The RTP plans for and identifies projects for multiple modes of transportation in order to achieve a balanced regional system. It establishes the basis for state funding of local and regional transportation projects, and is a prerequisite for federal funding. SANDAG prioritizes and allocates the expenditure of regional, state and federal transportation funds to implement RTP projects.
- The region's Congestion Management Program (CMP), also prepared by SANDAG, serves as a short-term element of the RTP. It focuses on actions that can be implemented in advance of the longer-range transportation solutions contained within the RTP. The CMP establishes programs for mitigating the traffic impacts of new development and monitoring the performance of system roads relative to Level of Service (LOS) standards. It links land use, transportation, and air quality concerns.



The Mobility Element, the RTP and the CMP all highlight the importance of integrating transportation and land use planning decisions, and using multi-modal strategies to reduce congestion and increase travel choices. However, the Mobility Element more specifically plans for the City of San Diego's (City) transportation goals and needs. City interests are represented in the development and adoption of SANDAG documents through the votes of our elected officials serving on the SANDAG Board of Directors, staff participation on SANDAG advisory committees, and direct citizen participation in the process. The Mobility Element Section K, and Public Facilities Element Section B, contain policies on how to work effectively with SANDAG to help ensure that City of San Diego transportation priorities are implemented.

The effectiveness of policies to improve mobility will be measured through monitoring of General Plan and regional plan implementation. The General Plan Monitoring Report measures progress toward reducing traffic congestion through the use of Sustainable Community Indicators that include measurements such as vehicle miles traveled per capita and number of weekday transit riders. SANDAG monitors and evaluates the performance and operation of the region's transportation system using performance indicators that are measured in an annual report.

A. Walkable Communities

Goals

- ◆ A city where walking is a viable travel choice, particularly for trips of less than one-half mile.
- ◆ A safe and comfortable pedestrian environment.
- ◆ A complete, functional, and interconnected pedestrian network, that is accessible to pedestrians of all abilities.
- ◆ Greater walkability achieved through pedestrian-friendly street, site and building design.

Discussion

The pedestrian environment affects us all whether we are walking to transit, a store, school, or simply getting from a parked car to a building. Pedestrian activity is more likely in areas where designations are nearby. People enjoy walking in places where there are sidewalks shaded with trees, lighting, interesting buildings or scenery to





look at, other people outside, neighborhood destinations, and a feeling of safety. Pedestrian improvements in areas with land uses that promote pedestrian activities can help to increase walking as a means of transportation and recreation. Land use and street design recommendations that benefit pedestrians also help promote use of alternatives to automobile travel and contribute to the overall quality, vitality, and sense of community of our neighborhoods. Walkable communities offer public health benefits by providing opportunities for people to be active as a part of their everyday lives.

The policies below address safety, accessibility and connectivity, and walkability goals. More specific actions to implement these policies are recommended to be included in a citywide Pedestrian Master Plan (PMP). The PMP will identify and prioritize pedestrian improvement projects based on technical analysis and community input. The PMP is intended to be complementary to the community plans, recognizing that not all community plans currently address pedestrian issues.

Policies

Safety and Accessibility

- ME-A.1. Design and operate sidewalks, streets, and intersections to emphasize pedestrian safety and comfort through a variety of street design and traffic management solutions, including but not limited to those described in the Pedestrian Improvements Toolbox, Table ME-1.
- ME-A.2. Design and implement safe pedestrian routes.
- Collaborate with appropriate community groups, and other interested private and public sector groups/individuals to design and implement safe pedestrian routes to schools, transit, and other highly frequented destinations.



Safe Routes to Schools



Mobility Element

- b. Implement needed improvements and programs such as wider and non-contiguous sidewalks, more visible pedestrian crossings, traffic enforcement, traffic calming, street and pedestrian lighting, pedestrian trails, and educating children on traffic and bicycle safety.
- c. Promote "Walking School Bus" efforts where parents or other responsible adults share the responsibility of escorting children to and from school by foot or bicycle.
- d. When new schools are planned, work with school districts and affected communities to locate schools so that the number of students who can walk to school safely is maximized.
- e. Implement Crime Prevention Through Environmental Design (CPTED) measures to reduce the threat and incidence of crime in the pedestrian environment (see also Urban Design Element, Policy UD-A.17).
- f. Ensure that there are adequate law enforcement, code enforcement, and litter and graffiti control to maintain safe and attractive neighborhoods.
- g. Provide adequate levels of lighting for pedestrian safety and comfort.

ME-A.3. Engage in a public education campaign to increase drivers' awareness of pedestrians and bicyclists, and to encourage more courteous driving.

ME-A.4. Make sidewalks and street crossings accessible to pedestrians of all abilities.

- a. Meet or exceed all federal and state requirements.
- b. Provide special attention to the needs of children, the elderly, and people with disabilities.
- c. Maintain pedestrian facilities to be free of damage or trip hazards.

ME-A.5. Provide adequate sidewalk widths and clear path of travel, as determined by street classification, adjoining land uses, and expected pedestrian usage.

- a. Minimize obstructions and barriers that inhibit pedestrian circulation.
- b. Consider pedestrian impacts when designing the width and number of driveways within a street segment.



Connectivity

ME-A.6. Work toward achieving a complete, functional and interconnected pedestrian network.

- a. Ensure that pedestrian facilities such as sidewalks, trails, bridges, pedestrian-oriented and street lighting, ramps, stairways and other facilities are implemented as needed to support pedestrian circulation. Additional examples of pedestrian facilities are provided in the Pedestrian Improvements Toolbox, Table ME-1.
 1. Close gaps in the sidewalk network.
 2. Provide convenient pedestrian connections between land uses, including shortcuts where possible.
 3. Design grading plans to provide convenient and accessible pedestrian connections from new development to adjacent uses and streets.
- b. Link sidewalks, pedestrian paths and multi-purpose trails into a continuous region-wide network where possible (see also Recreation Element, Policy RE-C.6).
- c. Provide and maintain trash and recycling receptacles, and restrooms available to the public where needed.
- d. Address pedestrian needs as an integral component of community and public facilities financing plan updates and amendments, other planning studies and programs, and the development project review process.
- e. Routinely accommodate pedestrian facilities and amenities into private and public plans and projects.



North Park pedestrian breakthroughs



Mobility Element

Walkability

- ME-A.7. Improve walkability through the pedestrian-oriented design of public and private projects in areas where higher levels of pedestrian activity are present or desired.
- Enhance streets and other public rights-of-way with amenities such as street trees, benches, plazas, public art or other measures including, but not limited to those described in the Pedestrian Improvement Toolbox, Table ME-1 (see also Urban Design Element, Policy UD-A.10).
 - Design site plans and structures with pedestrian-oriented features (see also Urban Design, Policies UD-A.6, UD-B.4, and UD-C.6).
 - Encourage the use of non-contiguous sidewalk design where appropriate to help separate pedestrians from auto traffic. In some areas, contiguous sidewalks with trees planted in grates adjacent to the street may be a preferable design.
 - Enhance alleys as secure pathways to provide additional pedestrian connections.
 - Implement traffic calming measures to improve walkability in accordance with Policy ME-C.5.
 - When existing sidewalks are repaired or replaced, take care to retain sidewalk stamps and imprints that are indicators of the age of a particular neighborhood, or that contribute to the historic character of a neighborhood.
- ME-A.8. Encourage a mix of uses in villages, commercial centers, transit corridors, employment centers and other areas as identified in community plans so that it is possible for a greater number of short trips to be made by walking.
- ME-A.9. Continue to collaborate with regional agencies, school districts, community planning groups, community activists, public health professionals, developers, law and code enforcement officials, and others, to better realize the mobility, environmental, social, and health benefits of walkable communities.




TABLE ME-1 Pedestrian Improvement Toolbox

Pedestrian Improvement	Description	Illustration
Accessible Pedestrian Traffic Signal	Accessible Pedestrian Traffic Signals are devices that communicate information about pedestrian timing in nonvisual format such as audible tones, verbal messages, and/or vibrating surfaces.	
Connection Pathway for Pedestrians	Connection Pathways for Pedestrians provide a more direct access between streets that do not connect.	
Curb Radius Reduction	Curb Radius Reductions provide tighter corner radii at intersections. This treatment reduces the speeds of right-turning vehicles, increases the visibility of pedestrians to drivers, and reduces the crossing distance for pedestrians.	
Curb Ramp	A Curb Ramp is a combined ramp and landing that provides an accessible transition between the high and low sides of a curb. Curb ramps provide street and sidewalk access to pedestrians using wheelchairs.	
Education, Encouragement, and Awareness Programs	Education, Encouragement and Awareness Programs include activities at local schools that teach children about pedestrian safety, programs that encourage walking to school or work, and traffic safety awareness campaigns.	



TABLE ME-1 Pedestrian Improvement Toolbox (continued)



Pedestrian Improvement	Description	Illustration
Enforcement	Enforcement requires the presence of police officers to monitor and enforce speed limits and other traffic regulations. Enforcement is used to improve compliance with traffic laws.	
High-Visibility Crosswalk Striping	High Visibility Crosswalk Striping such as zebra or ladder-style markings improve visibility of crosswalks to drivers.	
Lead Pedestrian Interval at Traffic Signals	Lead Pedestrian Intervals at Traffic Signals enable pedestrians to establish themselves in the crosswalk before concurrent traffic movements get a green indication. This reduces conflicts between pedestrians and turning vehicles.	
Marked Crosswalks with In-Pavement Flashers	Marked Crosswalks with In-Pavement Flashers are highly visible and warn drivers that pedestrians are present in the crosswalk.	
On-Street Parking	On-Street Parking provides a buffer between pedestrians on the sidewalk and moving vehicles.	



TABLE ME-1 Pedestrian Improvement Toolbox (continued)

Pedestrian Improvement	Description	Illustration
Pedestrian Countdown Display at Traffic Signals	Pedestrian Countdown Displays at Traffic Signals let pedestrians know how much crossing time remains.	
Planting Strip/Parkway Planting	A Planting Strip/Parkway Planting along the sidewalk sets the pedestrian path away from the roadway, provides a buffer between pedestrians and moving vehicles, and is aesthetically pleasing.	
Pedestrian-Scale Lighting	Pedestrian-Scale Lighting improves visibility and security.	
Pedestrian Bridge/Grade Separation	Pedestrian Bridges/Grade Separations eliminate conflicts between vehicles and pedestrians.	
Pop-out/Bulb-out/Curb Extension	Bulb-outs, also known as Pop-Outs and Curb Extensions, narrow the width of a street at an intersection by extending the curb into roadway at the corner(s) of an intersection. This reduces the speeds of right-turning vehicles, increases the visibility of pedestrians to drivers, and creates a shorter crossing distance, reducing pedestrians' exposure to moving vehicles.	



TABLE ME-1 Pedestrian Improvement Toolbox (continued)









Pedestrian Improvement	Description	Illustration
Raised Crosswalks	Raised Crosswalks have ramps on both sides of the flat crosswalk surface. The vertical deflection encourages traffic to slow down while markings increase visibility of the crosswalk to drivers.	
Raised Median Pedestrian Refuge	Raised Median Pedestrian Refuges are used to reduce pedestrian exposure to moving vehicles, and provide a refuge in the middle of the street. This allows the pedestrian to identify a safe gap and cross one direction of traffic at a time.	
Sidewalk	Sidewalks are walkways that parallel vehicle roadways. Contiguous sidewalks have the pedestrian path of travel immediately adjacent to the curb. Non-contiguous sidewalks have the pedestrian path of travel separated from the curb by a planting strip.	
Street Furnishings for Comfort	Street Furnishings such as benches and other amenities improve the pedestrian environment.	
Trees for Shade	Canopy Trees provide protection from the sun. When trees are located between the sidewalk and roadway, they provide a buffer between pedestrians and moving vehicles.	



TABLE ME-1 Pedestrian Improvement Toolbox (continued)

Pedestrian Improvement	Description	Illustration
Traffic Controls	Traffic controls such as stop signs and traffic signals assign right-of way.	
Turn Restrictions	Turn Restrictions may be used at intersections to reduce or eliminate vehicle conflicts with pedestrians.	
Walkways	Walkways are prepared exterior routes designed to provide pedestrian accessibility. They are general pedestrian routes, including plazas, courts and sidewalks.	



B. Transit First

Goals

- ◆ An attractive and convenient transit system that is the first choice of travel for many of the trips made in the City.
- ◆ Increased transit ridership.

Discussion

A primary strategy of the General Plan is to reduce dependence on the automobile in order to achieve multiple and inter-related goals including: increasing mobility, preserving and enhancing neighborhood character, improving air quality, reducing storm water runoff, reducing paved surfaces, and fostering compact development and a more walkable city. Expanding transit services is an essential component of this strategy.

Regional Collaboration

The Regional Transit Vision (RTV), adopted as a part of the 2030 Regional Transportation Plan (RTP), calls for development of a fast, flexible, reliable and convenient transit system that connects the region's major employment and activity centers with a rich network of transit services, and improves the quality of the travel experience for transit patrons. Under this vision, transit and land use will be tightly linked, with transit stations integrated into walkable, transit-oriented neighborhoods and centers. In addition to the existing and planned light and commuter rail networks the vision incorporates the use of Bus Rapid Transit (BRT) vehicles. The BRT vehicles have the flexibility of standard buses, but have the look and feel of rail vehicles. Greater use of low-floor transit vehicles and smart fare cards will allow for easier and speedier passenger boarding. Upgraded stations and real-



The American Plaza Trolley Station downtown provides an architecturally integrated, "front door" experience for transit patrons.



Local bus service improvements are needed to create a high-frequency urban network of transit routes.



time information will let patrons know when the next vehicle will be arriving. Continued refinements of the RTV are expected to occur over time as additional transit-related research and analysis take place.

Successful implementation of capital, operational, and station area improvements is intended to result in a transit system that is so attractive and convenient that transit will become the first choice of travel for many of the trips made in the region. Regional transit connectivity is to be provided through Regional, Corridor, Local, and Neighborhood transit services. Local and neighborhood services serve local trips, and may also provide linkages to regional and corridor services.

Transit – Supportive City Land Use Planning

The Transit/Land Use Connections Map (Figure ME-1) shows lines that are a part of the urban network adopted by the Metropolitan Transit System in 2006 and the land uses that these routes serve. Urban Network routes operate with service frequencies of 15 minutes throughout most of the day. Peak hour service frequencies may be greater to handle demand, while late evening service may be less.

The Transit/Land Use Connections Map also shows planned rail and bus rapid transit routes that were adopted in the RTP Mobility 2030 transit network in the City of San Diego. The State Route 56 and Carroll Canyon corridors are shown as areas where the City will continue to work with SANDAG to plan for future transit service for existing and planned transit-oriented developments in these corridors.

The City of Villages strategy supports expansion of the transit system by calling for villages, employment centers, and other higher-intensity uses to be located in areas that can be served by high quality transit services. This will allow more people to live and work within walking distance of transit. The General Plan also supports transit through policies supportive of transit and pedestrian-oriented design, and implementation of transit priority measures.



Coaster commuter rail services connect to trolley services at designated transfer stations.



Policies

Regional Agency Collaboration

- ME-B.1. Work closely with regional agencies and others to increase transit ridership and mode share through increased transit service accessibility, frequency, connectivity, and availability.
- Develop an urban network of routes that operate with a base, mid-day service frequency of ten-minute intervals or better;
 - Provide transit routes that offer efficient connections between highly frequented origins and destinations; and
 - Enhance overall transit customer experience through attention to safety, station areas, vehicles, seating, and other factors.
- ME-B.2. Support the provision of higher-frequency transit service and capital investments to benefit: higher-density residential or mixed-use areas; higher-intensity employment areas and activity centers; and community plan-identified neighborhoods; community and urban villages; and transit-oriented development areas.
- ME-B.3. Design and locate transit stops/stations to provide convenient access to high activity/density areas, respect neighborhood and activity center character, implement community plan recommendations, enhance the users' personal experience of each neighborhood/center, and contain comfortable walk and wait environments for customers (see also Urban Design Element, Policy UD-A.9).
- ME-B.4. Collaborate with regional agencies to evaluate the need for park-and-ride spaces at transit stations based on the character of the neighborhood, community plan recommendations, and the stations role in the regional transit system (see also Urban Design Element, Policies UD-A.11 and UD-A.12 for guidance on parking facility design).
- ME-B.5. Integrate the regional transit system with the intercity rail network.



El Cajon Blvd. – transit lane simulation



- ME-B.6. Work closely with regional agencies to achieve a transit system that is accessible to persons with disabilities.
- ME-B.7. Support efforts to develop additional transportation options for non-driving older adults and persons with disabilities, including:
- expansion of the regional database of public and private/nonprofit transportation providers;
 - development of innovative programs to link a wide range of transportation providers with persons in need; and
 - identification of transportation providers and programs that could assist in evacuating persons in need, as a part of emergency and disaster preparedness plans that are referenced in the Public Facilities Element Section P.
- ME-B.8. Support efforts to use alternative fuels in transit vehicles to help implement air quality and energy conservation goals (see also Conservation Element, Policies CE-D.7 and CE-G.9).

Transit Supportive City Land Use Planning

- ME-B.9. Make transit planning an integral component of long range planning documents and the development review process.
- a. Identify recommended transit routes and stops/stations as a part of the preparation of community plans and community plan amendments, and through the development review process.
 - b. Plan for transit-supportive villages, transit corridors, and other higher-intensity uses in areas that are served by existing or planned higher-quality transit services, in accordance with Land Use and Community Planning Element Sections A and C.
 - c. Proactively seek reservations or dedications of right-of-way along transit routes and stations through the planning and development review process.
 - d. Locate new public facilities that generate large numbers of person trips, such as libraries, community service centers, and some recreational facilities in areas with existing or planned transit access.
 - e. Design for walkability in accordance with the Urban Design Element, as pedestrian supportive design also helps create a transit supportive environment.
- ME-B.10. Implement transit priority measures to help bypass congested areas. Priority measures include, but are not limited to, transit signal priority, queue jumpers, exclusive transit lanes, transit ways, use of freeway shoulders, and direct access ramps to freeway High Occupancy Vehicle (HOV) facilities.



C. Street and Freeway System

Goals

- ◆ A street and freeway system that balances the needs of multiple users of the public right-of-way.
- ◆ An interconnected street system that provides multiple linkages within and between communities.
- ◆ Vehicle congestion relief.
- ◆ Safe and efficient street design that minimizes environmental and neighborhood impacts

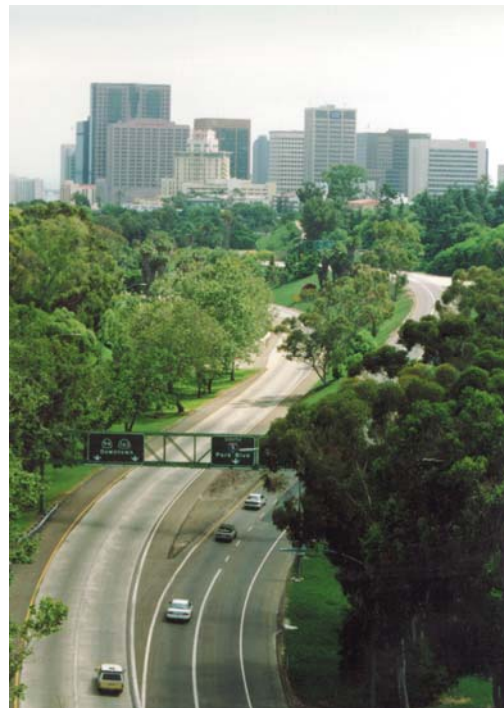
Discussion

Streets and freeways comprise the framework of our transportation system and play a major role in shaping the form of the City. The quality of the roadway system affects us whether we travel by automobile, transit, bicycle, or foot, and influences which mode of travel we choose.

Transportation System Planning

The Regional Transportation Plan (RTP) is a comprehensive plan for major transportation projects in the San Diego region. The RTP places a high priority on improvements to the freeways and state highways, transit services, and arterial roads that accommodate the largest volumes of regional trips.

Freeway improvements are planned or underway for segments of Interstates 5, 15, and 805, State Routes 52, 54, 56, 94, and 125, as well as the construction of Routes 905 and 11 along the U.S. - Mexico Border. The RTP includes an extensive Managed Lanes/High Occupancy Vehicle (HOV) network that provides priority access for Bus Rapid Transit and ride sharing. The California Department of Transportation (Caltrans) manages California's highway and freeway lanes among other responsibilities. Any work on state freeways and highways will need to be done in accordance with Caltrans standards. In addition to freeway construction, the RTP calls for efficiency improvements using system and transportation demand management strategies, transit service improvements, bicycling and walking infrastructure improvements, and support for transit-oriented design and development.



State Route 163



Streets and freeways within the City of San Diego are shown on the General Plan Land Use Map – Planned Land Use and Street System Map (see also Land Use Element, Figure LU-2). This map includes the freeways, expressways, and arterial, major and collector streets needed to serve vehicular transportation demand resulting from the buildout of the City of San Diego in accordance with this General Plan. A finer level of street system details may be provided at the community plan level. As part of community plan updates, land use and street network alternatives are analyzed using transportation models and software to estimate traffic generation, forecast traffic volumes and evaluate levels of service on the transportation system for each alternative. Adopted community plans specify the planned system of classified streets within the local community.

Street Layout, Design, and Operations

Street design (and redesign) affects how streets look and function in communities and in the City as a whole. The City of San Diego's Street Design Manual (2002) contains guidelines for the physical design of streets that consider the needs of all users of the public right-of-way. The manual includes provisions for street trees, traffic calming and pedestrian design guidelines, and addresses how to create streets that are important public places. The Street Design Manual guidelines apply to newly developing areas and as appropriate to older areas undergoing redevelopment construction and whenever improvements are made to existing facilities. Opportunities for change exist when roadway improvement plans are designed to serve development projects (new growth, infill or redevelopment) and through capital improvement projects.

Travel choices and routes are affected by the connectivity of the overall street network, in addition to the design of individual streets. A high degree of connectivity is desirable as it allows for shorter travel distances between destinations and greater dispersal of traffic. Travelers benefit from shorter trips and multiple route options, and are more likely to walk or bicycle if distances are short.

While vehicle congestion relief is an overall goal of the Mobility Element, the degree of acceptable vehicle congestion will vary in different locations based on the function of the roadway and the desired community character. Decisions that must balance the benefits and impacts of designing our transportation system for multiple modes of transportation will need to be made at the community plan or project level.

The quality of our traveling experience is also influenced by the scenic quality of the area traversed. San Diego enjoys many scenic vistas of our coastline, canyons, and other open spaces. Scenic highways and routes provide an opportunity for people to experience these views while traveling through the City.



Policies

Transportation System Planning

- ME-C.1. Identify the general location and extent of streets, sidewalks, trails, and other transportation facilities and services needed to enhance mobility in community plans.
- Protect and seek dedication or reservation of right-of-way for planned transportation facilities through the planning and development review process.
 - Implement street improvements and multi-modal transportation improvements as needed with new development and as areas redevelop over time.
 - Identify streets or street segments where special design treatments are desired to achieve community goals.
 - Identify streets or street segments, if any, where higher levels of vehicle congestion are acceptable in order to achieve vibrant community centers, increase transit-orientation, preserve or create streetscape character, or support other community-specific objectives.
 - Increase public input in transportation decision-making, including seeking input from multiple communities where transportation issues cross community boundaries.
- ME-C.2. Increase capacity and reduce congestion on the street and freeway system.
- Identify the City of San Diego's priorities for transportation infrastructure projects.
 - Provide the City's identified priorities for transportation infrastructure projects to SANDAG and Caltrans for funding purposes.
 - Work with SANDAG and Caltrans towards the implementation of the City's identified priorities for transportation infrastructure projects (see also Public Facilities Element, Policy PF-B.3).
 - Collaborate with SANDAG and Caltrans to ensure that relevant General Plan policies and community plan identified street network are reflected in regional and state plans and programs.
 - Provide rights-of-way for designated HOV facilities and transit facilities on City streets where feasible.
 - Evaluate RTP proposals for new or redesigned streets and freeways on the basis of demonstrated need and consistency with General Plan policies and community plan facility recommendations.

*Street Layout, Design and Operations*

- ME-C.3. Identify locations where the connectivity of the street network could be improved through the community plan update and amendment process, and through discretionary project review (see also Urban Design Element, Policy UD-B.5).
- a. Design an interconnected street network within and between communities, which includes pedestrian and bicycle access, while minimizing landform and community character impacts.
 1. Use local and collector streets to form a network of connections to disperse traffic and give people a choice of routes to neighborhood destinations such as schools, parks, and village centers. This network should also be designed to control traffic volumes and speeds through residential neighborhoods.
 2. In newly developing areas or in large-scale redevelopment/infill projects, strive for blocks along local and collector streets to have a maximum perimeter of 1,800 feet.
 3. When designing modifications/improvements to an existing street system, enhance street or pedestrian connections where possible.
 - b. Provide direct and multiple street and sidewalk connections within development projects, to neighboring projects, and to the community at large.
 - c. Where possible, design or redesign the street network, so that wide arterial streets do not form barriers to pedestrian traffic and community cohesiveness.
- ME-C.4. Improve operations and maintenance on City streets.
- a. Regularly optimize traffic signal timing and coordination to reduce travel time and delay and implement new signal and intersection technologies that improve pedestrian safety and traffic flow.
 - b. Adequately maintain the transportation system.
 - c. When new streets are built and as existing streets are modified - design, construct, and operate City streets to accommodate and balance service to all users/modes (including walking, bicycling, transit, High Occupancy Vehicles (HOVs), autos, trucks, automated waste and recycling collection vehicles, or emergency vehicles).
- ME-C.5. Install traffic calming measures, including but not limited to those identified on Table ME-2, to increase the safety and enhance the livability of communities.
- a. Use traffic calming techniques in appropriate locations to reduce vehicle speeds or discourage shortcutting traffic.
 - b. Choose traffic calming devices to best fit the situations for which they are intended.
 - c. Place traffic calming devices so that the full benefit of calming will be realized with little or no negative effect upon the overall safety or quality of the roadway.
 - d. Design traffic calming devices appropriately, including consideration for accessibility, drainage, underground utilities, adequate visibility, the needs of



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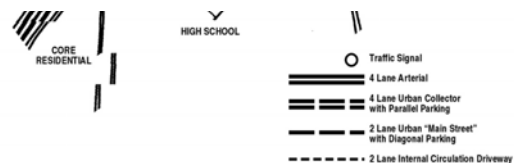
emergency, sanitation, and transit vehicles, and landscaping.

- e. Weigh any potential undesired effects of traffic calming devices (such as increased travel times, emergency response times, noise, and traffic diversion) against their prescribed benefits.

- ME-C.6. Locate and design new streets and freeways and, to the extent practicable, improve existing facilities to: respect the natural environment, scenic character, and community character of the area traversed; and meet safety standards.
- a. Establish general road alignments and grades that respect the natural environment and scenic character of the area traversed.
 - b. Design roadways and road improvements to maintain and enhance neighborhood character.
 - c. Design streets and highways that incorporate physical elements to improve the visual aspects of roadways.
 - d. Provide adequate rights-of-way for scenic lookouts, and obtain scenic easements to ensure the preservation of scenic views.
 - e. Preserve trees and other aesthetic and traffic calming features in the median and along the roadside.
 - f. Avoid or minimize disturbances to natural landforms.
 - g. Contour manufactured slopes to blend with the natural topography.
 - h. Promptly replant exposed slopes and graded areas to avoid erosion.
 - i. Employ landscaping to enhance or screen views as appropriate.



Pacific Highlands Ranch, interconnected street network





- j. Select landscape designs and materials on the basis of their aesthetic qualities, compatibility with the surrounding area, and low water demand and maintenance requirements.
 - k. Utilize signs, lights, furniture, and other accessories suitable for the location.
 - l. Place utility lines underground.
 - m. Emphasize aesthetics and noise reduction in the design, improvement, and operation of streets and highways.
 - n. Avoid frequent driveway curb cuts that create conflict points between autos and pedestrians.
- ME-C.7. Preserve and protect scenic vistas along public roadways.
- a. Identify state highways where the City desires to preserve scenic qualities and work with Caltrans to pursue official scenic highway designation.
 - b. Designate scenic routes along City streets to showcase scenic vistas and to link points of visitor interest.
 - c. Adopt measures to protect aesthetic qualities within scenic highways and routes.
- Project Review Considerations*
- ME-C.8. Maintain innovative Traffic Impact Study Guidelines with flexibility to address site and community specific issues.
- a. Give consideration to the role of alternative modes of transportation and transportation demand management (TDM) plans in addressing development project traffic impacts.
 - b. Consider the results of site-specific studies or reports that justify vehicle trip reductions. (See also ME-E.7.)
 - c. Give consideration to the anticipated cumulative impacts when evaluating a single project's transportation impacts.
- ME-C.9. Develop multi-modal Level of Service (LOS) standards and significance impact thresholds to use in community plan updates and development project reviews. Estimate the number of pedestrian, bicycle, and transit trips generated by projects to help quantify their significance as modes of transportation.
- ME-C.10. Provide transportation facilities to serve new growth in accordance with Policies ME-K.4-K.6, and Public Facilities Element Sections A-C.



TABLE ME-2 Traffic Calming Toolbox


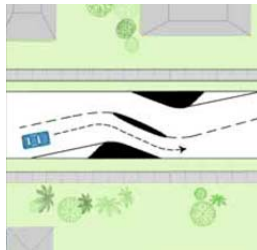
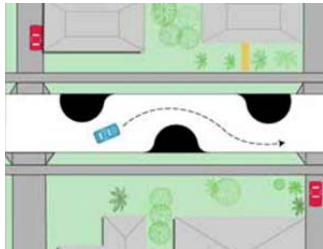
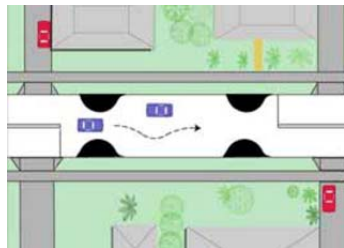
Traffic Calming Tool	Description	Illustration
<i>Speed Control Tools</i>		
Angled Parking	Angled Parking is generally used to increase the number of on-street parking spaces. However, a positive by-product can be a reduction in vehicle speeds due to narrowing of the travelway and driver anticipation of vehicles backing out of parking spaces.	
Angled Slow Point	Angled Slow Points are created by installing triangular curb extensions on opposite sides of the road. This creates a narrow travelway between the extensions that deflects approaching vehicles' paths of travel. Drivers must slow down to maneuver through the curves to negotiate this device.	
Chicane	Chicanes are created by installing a series of two or more curb extensions, alternating from one side of the roadway to the other. This creates an S-shaped path of travel for vehicles. To reduce speeds, chicanes rely on a curvilinear path and potential conflicts between opposing traffic.	
Choker	Chokers are created by installing curb extensions at opposing locations on a roadway. This narrows the travelway, but maintains two-way traffic. This device works best at mid-block locations that have volumes sufficient enough that opposing traffic would be approaching or passing through the choker at the same time.	



TABLE ME-2 Traffic Calming Toolbox (continued)


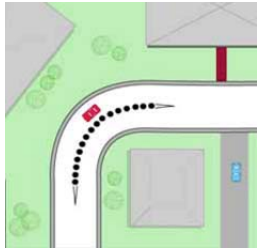

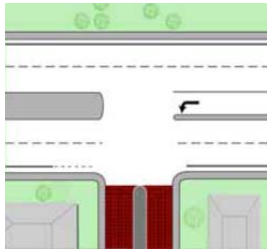
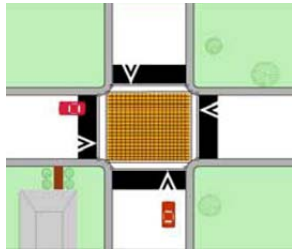
Traffic Calming Tool	Description	Illustration
<i>Speed Control Tools</i>		
Curb Radius Reduction	Curb Radius Reductions provide tighter corner radii at intersections. This treatment reduces the speeds of right-turning vehicles, increases the visibility of pedestrians to drivers, and reduces the crossing distance for pedestrians.	
Curve Treatment	Curve Treatments such as raised median or raised pavement markers placed along the centerline of a sharp curve will prevent or discourage vehicles from cutting across the centerline and into the opposing travel lane. Vehicle speeds are generally reduced due to the shorter radius of the vehicle path around the curve.	
Enforcement	Enforcement requires the presence of police officers to monitor and enforce speed limits and other traffic regulations. Enforcement is used to improve compliance with traffic laws.	
Gateway/Entrance Treatment	Gateway/Entrance Features may be used on local streets at their intersections with collector, major, or arterial streets. They alert the driver that they are entering a residential neighborhood. A typical gateway treatment may include a center median with a specimen tree or neighborhood sign and textured roadway pavement.	
Intersection Table/Raised Intersection	Intersection Tables/Raised Intersections are created by raising the roadway within the intersection to be level with the sidewalks. Ramped edges on all approaches and exits encouraging drivers to slow down as they drive through the intersection.	



TABLE ME-2 Traffic Calming Toolbox (continued)

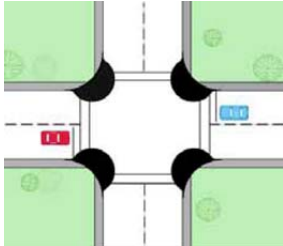

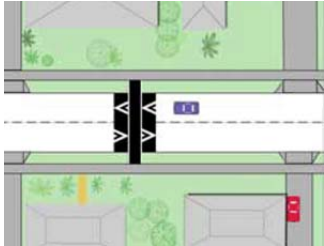
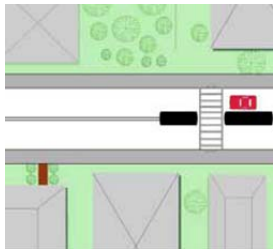
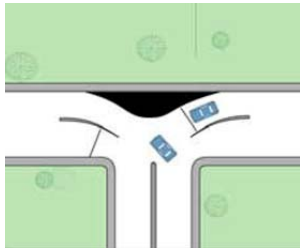
Traffic Calming Tool	Description	Illustration
<i>Speed Control Tools</i>		
Pop-out/Bulb-out/Curb Extension	Bulb-outs, also known as Pop-Outs and Curb Extensions, narrow the width of a street at an intersection by extending the curb into roadway at the corner(s) of an intersection. This reduces the speed of right-turning vehicles, increases the visibility of pedestrians to drivers, and creates a shorter crossing distance, reducing pedestrians' exposure to moving vehicles.	
Radar Speed Trailer	Radar Speed Trailers are used to make drivers aware of their speeds, usually as they travel on residential streets. Radar speed trailers are mobile and can be used as a temporary measure to reduce speeding.	
Raised Crosswalk	Raised Crosswalks have ramps on both sides of the flat crosswalk surface. The vertical deflection encourages traffic to slow down while markings increase visibility of the crosswalk to drivers.	
Raised Median Pedestrian Refuge	Raised Median Pedestrian Refuges are used to reduce pedestrian exposure to moving vehicles and provide a refuge in the middle of the street. This allows the pedestrian to identify a safe gap and cross one direction of traffic at a time.	
Realigned T-Intersection	Realigned T-Intersections have a bulb-out in the intersection to deflect the through movements so they will follow a curvilinear path. Medians may also be installed on the through street approaches to guide traffic through the intersection.	


TABLE ME-2 Traffic Calming Toolbox (continued)

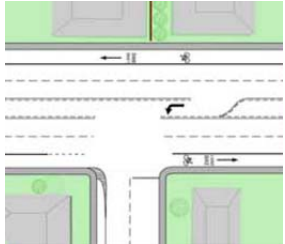
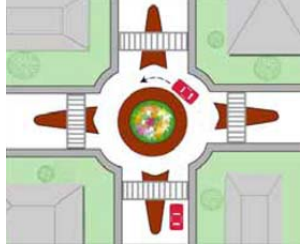
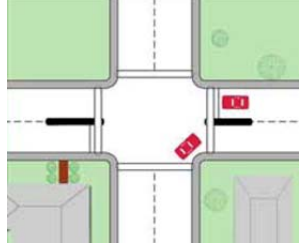


Traffic Calming Tool	Description	Illustration
<i>Speed Control Tools</i>		
Roadway Striping	Roadway Striping changes the appearance of the roadway, encouraging drivers to remain in designated travel lanes. Striping an existing roadway to delineate bicycle lanes, on-street parking areas, or shoulders along curves, also narrows the vehicle travel lanes which may reduce speeds.	
Roundabout	A Roundabout is a type of intersection in which traffic flows counter-clockwise around a circular raised center island. Drivers entering the roundabout yield to traffic already circulating within the intersection. Vehicle speeds are reduced due to the curvilinear path of travel. Pedestrian crosswalks are set back from the intersection and use splitter islands to provide a pedestrian refuge.	
Short Intersection Median/Median Slow Point	Short Intersection Medians or Median Slow Points are installed at intersection approaches to prevent turning vehicles from encroaching into opposing travel lanes and to reduce the vehicle turning radius which reduces speeds of turning vehicles.	
Signage	Signage comes in various forms to provide regulations, warnings, and guidance information for road users.	
Speed Feedback Signs	Permanent Speed Feedback Signs are used to make drivers aware of their speeds. These signs are set up permanently for a more lasting effect than is provided by the temporary radar speed trailer.	

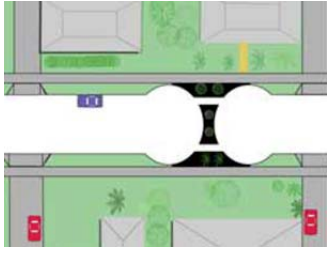
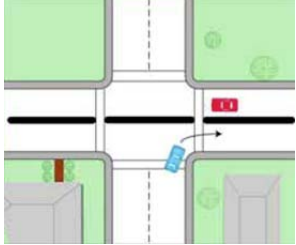
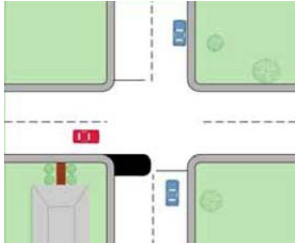




TABLE ME-2 Traffic Calming Toolbox (continued)

Traffic Calming Tool	Description	Illustration
<i>Speed Control Tools</i>		
Speed Hump	Speed Humps are vertical deflection devices placed on top of the roadway to reduce speeding. They generally span the width of the road, are approximately 3.5 inches high and 12 feet long with a parabolic cross section.	A top-down view of a road with a dashed center line. A black, parabolic-shaped hump is placed across the entire width of the road. Red 'X' marks are on the sidewalks, and green trees are on the grassy areas.
Speed Lump	Speed Lumps are vertical deflection devices placed on top of the roadway to reduce speeding similar to Speed Humps. Speed lumps have two tire cut-outs to allow an emergency vehicle's tire path to traverse the lump virtually unimpeded.	A top-down view of a road with a dashed center line. A black, rectangular-shaped lump is placed across the road, featuring two narrow vertical cutouts in the center. Red 'X' marks are on the sidewalks, and green trees are on the grassy areas.
Speed Table	Speed Tables are vertical deflection devices that have ramps on both sides of a flat surface. The vertical deflection encourages traffic to slow down.	A top-down view of a road with a dashed center line. A black, rectangular-shaped table is placed across the road, with ramps on either side leading up to a flat top surface. Red 'X' marks are on the sidewalks, and green trees are on the grassy areas.
Traffic Circle	A Traffic Circle is a circular island placed in the center of an intersection. Traffic flows counter-clockwise around the island with drivers yielding to vehicles already circulating within the intersection. Vehicle speeds are reduced due to the horizontal deflection required to drive through the intersection.	A top-down view of a four-way intersection. A circular island with a green center and a red border is in the middle. Arrows indicate counter-clockwise traffic flow around the island. Red 'X' marks are on the sidewalks, and green trees are on the grassy areas.
<i>Volume Control Tools</i>		
Diagonal Diverter	Diagonal Diverters are barriers constructed across a four-legged intersection blocking the through movements.	A top-down view of a four-way intersection. A black, diagonal barrier is placed across the intersection, blocking the through movements. Red 'X' marks are on the sidewalks, and green trees are on the grassy areas.



TABLE ME-2 Traffic Calming Toolbox (continued)

Traffic Calming Tool	Description	Illustration
<i>Volume Control Tools</i>		
Full Street Closure/Cul-De-Sac	A Full Street Closure/Cul-de-Sac is created by constructing a barrier across an entire street, closing the street to all through vehicular traffic with considerations to maintain pedestrian, bicycle, and emergency vehicle access.	
Median Barrier	Median Barriers/Channelization help prevent cut-through traffic in residential neighborhoods. The raised median is used on the major street, restricting traffic from continuing from one residential neighborhood to the next. The median barrier also restricts left-turns to and from the major street.	
Partial Street Closure/Semi-Diverter	Partial Street Closures/Semi-Diversers are barriers that block one direction of travel to restrict vehicular access to or from a street while maintaining pedestrian and bicycle access.	
Right-In/Right-Out Island	Right-In/Right-Out Islands restrict left-turns into and out of a particular street. Rather than relying on a sign to discourage drivers from turning left, right-in/right-out islands force drivers to make the desired movement using a raised island.	
Turn Restriction	Turn Restrictions can help reduce cut-through traffic or eliminate turning movement conflicts. Turn restrictions, such as "No Right Turns 6AM-9AM" may help reduce traffic from cutting through a residential neighborhood to avoid a congested arterial.	



D. Intelligent Transportation Systems (ITS)

Goals

- ◆ A transportation system which operates efficiently, saves energy and reduces negative environmental impacts.
- ◆ A safe transportation system.
- ◆ A transportation system that effectively uses appropriate technologies.

Discussion

Intelligent Transportation Systems (ITS) is defined as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system. ITS includes a broad range of applications in areas ranging from collision warning and commercial vehicle operations systems to freeway, transit, and arterial management systems. Some examples of ITS applications most relevant to transportation planning for the City of San Diego include:

- **Arterial Management Systems** - parking management, traffic control, transit priority measures, and information dissemination
- **Freeway Management Systems** - ramp control, lane management and information dissemination
- **Transit Management Systems** - fleet management, safety and security, and real-time information dissemination
- **Incident Management Systems** - surveillance and detection, mobilization and response, and information dissemination
- **Emergency Management Systems** - emergency operations and hazardous materials cleanup
- **Electronic Payment** - toll collection and transit off-vehicle and Smart Card fare payment
- **Traveler Information** - pre-trip and en-route information and tourism and event services
- **Crash Prevention and Safety** - intersection detection systems, pedestrian safety and bicycle warning systems

The San Diego Region ITS Strategic Plan is the region's guiding document for development of ITS. The City, with various partners, has been involved in successful ITS projects including dozens of traffic signal systems and communications projects, and the Mission Valley Event Management System that helps manage traffic during stadium events. Work is also proceeding on a Regional Arterial Management Systems project to allow cross-jurisdictional coordination of traffic signals, and sharing of control of other traffic control devices. In addition, preliminary planning is underway for a Regional Operations Center, to serve as an intermodal transportation operations/management center for the City and transit operators.



Policies

- ME-D.1. Utilize the substantial regional Intelligent Transportation Systems (ITS) investments to achieve cost-effective improvements in transportation system performance and operations wherever possible.
- ME-D.2. Develop an ITS Plan for the City to facilitate effective implementation and operation of ITS in the City. The proposed ITS Plan should identify and prioritize specific short- and long-term ITS projects. Once identified, ITS projects should be strategically implemented as funding becomes incrementally available.
- ME-D.3. Participate in the design and development of the Regional Operations Center.
- ME-D.4. Automate the collection of real-time travel information regarding transportation system conditions and make the information available to users and operators.
- ME-D.5. Monitor and control traffic on City streets and coordinate traffic operations with other local agencies.
- ME-D.6. Support the use of technology to improve transit services through: tracking vehicles, maintaining schedules, predicting demand, facilitating fare payment, and operating fleets more efficiently.



Transportation safety and efficiency can be improved through ITS measures such as providing drivers with real-time road condition information.



E. Transportation Demand Management (TDM)

Goals

- ◆ Reduced single-occupant vehicular traffic on congested streets and freeways.
- ◆ Improved performance and efficiency of the street and freeway system, by means other than roadway widening or construction.
- ◆ Expanded travel options and improved personal mobility.

Discussion

Building additional street and freeway capacity to accommodate more vehicles will provide only partial relief to our traffic congestion problem. Transportation Demand Management (TDM) is a general term for strategies that assist in reducing the demand by single-occupant vehicles to increase the efficiency of existing transportation resources. These strategies are primarily directed at weekday commuters and are structured to:

- improve transportation options and reduce use of single-occupant vehicle trips by encouraging alternative modes of travel such as carpooling, vanpooling, transit use, bicycling, and walking;
- support the use of alternative modes of travel by encouraging on-site amenities, programs, and incentives such as the use of car sharing vehicles, bicycle lockers, food and child care services, guaranteed ride home programs, and commuter benefits;
- alter the timing of travel to less congested time periods, through strategies such as alternative work schedules; or
- reduce the number of commute trips through strategies such as telework, and alternative work schedules.

Vehicle trips and traffic congestion are regional and do not respect jurisdictional boundaries. A successful TDM program must be comprehensive and regional in scope with a clear, widely shared vision of potential benefits. SANDAG's regional TDM program establishes partnerships with employers to develop and implement employer commuter programs/plans. The City can support TDM through land use and parking strategies that require development project designs and features that are conducive to supporting alternative transportation options and development review policies that offer incentives to projects that implement TDM programs/plans.

Employment areas that have large employers with a high concentration of employees, access to alternative modes of transportation and High Occupancy Vehicle (HOV) lanes, and a large number of employees commuting long or very short distances, have a greater potential to benefit from TDM strategies.



Policies

- ME-E.1. Support TDM strategies including, but not limited to: alternative modes of transportation, alternative work schedules, and telework.
- ME-E.2. Maintain and enhance personal mobility options by supporting public and private transportation projects that will facilitate the implementation of Transportation Demand Management (TDM) strategies.
- ME-E.3. Emphasize the movement of people rather than vehicles.
- ME-E.4. Promote the most efficient use of the City's existing transportation network.
- ME-E.5. Support SANDAG's efforts to market TDM benefits to employers and identify strategies to reduce peak period employee commute trips.
- ME-E.6. Require new development to have site designs and on-site amenities that support alternative modes of transportation. Emphasize pedestrian and bicycle-friendly design, accessibility to transit, and provision of amenities that are supportive and conducive to implementing TDM strategies such as bike lockers, preferred rideshare parking, showers and lockers, on-site food service, and child care, where appropriate.
- ME-E.7. Consider TDM programs with achievable trip reduction goals as partial mitigation for development project traffic impacts.
- ME-E.8. Monitor implementation of TDM programs to ensure effectiveness.





THE CITY OF SAN DIEGO General Plan

Mobility Element

Figure ME-2

Existing and Proposed Bikeways

Bikeway classes have been generalized for mapping purposes based on City of San Diego Bicycle Master Plan.

Bicycle Routes

Existing Bicycle Facilities

Existing Bicycle Facilities include: Classes 1, 2, & 3 Bikeways

Proposed Bicycle Facilities

Proposed Bicycle Facilities include: Priority Classes 1, 2, & 3 as well as other proposed classes including 1, 2, & 3.

Existing and Planned Park and Open Space

Park

Open Space

Dedicated and designated planned open space and park information represented here may not be the current land use, but a best estimate based upon the SANDAG and SanGIS' generalized existing land use data and City of San Diego park and open space data.

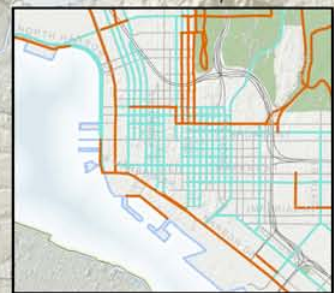
Other Features

Military Use

0 1 2 4 6 Miles



MEXICO



Centre City



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F. Bicycling

Goals

- ◆ A city where bicycling is a viable travel choice, particularly for trips of less than five miles.
- ◆ A safe and comprehensive local and regional bikeway network.
- ◆ Environmental quality, public health and mobility benefits through increased bicycling.

Discussion

Of all trips taken by all transportation modes, the average length is five miles - about a 30-minute bicycle ride. Many of these trips could be taken by bicycling, provided adequate consideration has been given to cycling infrastructure. Cyclists need safe bikeways that are connected to activity centers; easy access on public transit; convenient and secure bicycle parking; an educated driving public; and, shower and locker facilities. Bicycling offers benefits to society as a whole as it is a non-polluting and sustainable form of transportation, and individual cyclists enjoy personal fitness and potential savings in gasoline and other auto-related expenses.



Development, maintenance, and support of the bicycle network are guided by the City's Bicycle Master Plan (BMP). The BMP contains detailed policies, action items, and network maps, and addresses issues such as bikeway planning, community involvement, facility design, bikeway classifications, multi-modal integration, safety and education, and support facilities (see also Figure ME-2). The BMP is intended to provide a citywide perspective that is enhanced with more detailed community plan level recommendations and refinements. The BMP also identifies specific bicycling programs and addresses network implementation, maintenance and funding strategies. Key bicycling policies are stated below, and complementary policies can be found in the Walkable Communities, Streets and Freeways, and Transportation Demand Management sections of the Mobility Element. In addition, the City of San Diego Street Design Manual outlines bikeway design requirements.



Policies

- ME-F.1. Implement the Bicycle Master Plan, which identifies existing and future needs, and provides specific recommendations for facilities and programs over the next 20 years.
- Update the plan periodically as required by Caltrans, in a manner consistent with General Plan goals and policies.
 - Coordinate with other local jurisdictions, SANDAG, schools, and community organizations to review and comment on bicycle issues of mutual concern.
 - Reference and refine the plan, as needed, in conjunction with community plan updates.
 - Improve connectivity of the multi-use trail network, for use by bicyclists and others as appropriate.
- ME-F.2. Identify and implement a network of bikeways that are feasible, fundable, and serve bicyclists' needs, especially for travel to employment centers, village centers, schools, commercial districts, transit stations, and institutions.
- Develop a bikeway network that is continuous, closes gaps in the existing system, improves safety, and serves important destinations.
 - Implement bicycle facilities based on a priority program that considers existing deficiencies, safety, commuting needs, connectivity of routes, and community input.
 - Recognize that bicyclists use all City roadways.
 - Design future roadways to accommodate bicycle travel; and
 - Upgrade existing roadways to enhance bicycle travel, where feasible.
- ME-F.3. Maintain and improve the quality, operation, and integrity of the bikeway network and roadways regularly used by bicyclists.
- ME-F.4. Provide safe, convenient, and adequate short- and long-term bicycle parking facilities and other bicycle amenities for employment, retail, multifamily housing, schools and colleges, and transit facility uses.





- ME-F.5. Increase the number of bicycle-transit trips by coordinating with transit agencies to provide safe routes to transit stops/stations, to provide secure bicycle parking facilities, and to accommodate bicycles on transit vehicles.
- ME-F.6. Develop and implement public education programs promoting bicycling and bicycle safety.
- Increase public awareness of the benefits of bicycling and the availability of resources and facilities.
 - Increase government and public recognition of bicyclists' right to use public roadways.

G. Parking Management

Goals

- ◆ Parking that is reasonably available when and where it is needed through management of the supply.
- ◆ Solutions to community-specific parking issues through implementation of a broad range of parking management tools and strategies.
- ◆ New development with adequate parking through the application of innovative citywide parking regulations.
- ◆ Increased land use efficiencies in the provision of parking.

Discussion

Greater management of parking spaces can help achieve mobility, environmental, and community development goals. The General Plan proposes broad policies that are intended to form the basis for more detailed parking solutions that will be tailored to meet the needs of specific communities or areas. Parking design is addressed in the Urban Design Element, Policies UD-A.11 and UD-A.12.

Motorists are accustomed to "free" parking at many destinations, but in reality no parking is without cost. The real cost of parking is paid for by all of us through higher rents, lower salaries,



This public parking lot in Ocean Beach serves many uses and is enhanced with public art.



TABLE ME-3 Parking Strategies Toolbox

Parking Tool	Description
<i>Supply</i>	<i>Ways to Increase parking availability</i>
Public parking facilities	Provides spaces for multiple users or purposes.
In-lieu fees	A fee paid by developers instead of providing parking spaces. Helps finance public or shared parking facilities.
Angle parking	Where street width is adequate and driveway configuration permits, increase the number of spaces by restriping for angle spaces.
Curb utilization	Re-evaluate curb parking restrictions (red/yellow/white) to increase parking inventory where appropriate. Evaluate driveway locations and spacing when reviewing development proposals.
Minimum and maximum parking regulations	Requires specified amounts and dimensions of parking spaces, including disabled spaces, to accompany development.
Tandem parking (enclosed)	Parking space design where one car is parked behind another car in a garage or parking structure; uses approximately 25 percent less space than conventional design.
Car stackers/mechanized garages	Mechanical lifts that allow for the vertical storage of automobiles.
Bicycle Parking	Provision of convenient, secure parking for bicycles (see Bicycling section).
<i>Parking Management</i>	<i>Strategies for more efficient use of parking</i>
Shared parking	Sharing parking facilities among multiple users.
Parking pricing	Charging motorists directly for parking.
Time limits	Placing time limits on parking to encourage turnover of convenient spaces.
Parking Meter	Device to charge for and place time limits on parking.
Valet parking	Parking provided to and done for patrons.
Permit parking districts	Addresses transient and spillover parking problems by restricting on-street parking within a specified area to those with a valid parking permit.
Community Parking Districts	Geographic areas that implement community-specific plans and activities designed to alleviate parking impacts. Community Parking Districts also allow for direct investment and benefit of the parking management revenue generated within its boundaries.
Parking information	Provide information on parking availability and price.
Code enforcement	Increase usable supply of parking by enforcing: the use of garages for cars (not storage), time limit parking, and other parking restrictions.
<i>Demand</i>	<i>Ways to reduce the demand for parking.</i>
Transit Service	Improve and promote public transit.
Car sharing	Hourly vehicle rental services that can complement/supplement the use of alternative transportation modes and reduce the need for private vehicle ownership.
Walking	Improve walking conditions.
Bicycling	Improve bicycle transportation and supporting infrastructure (see Bicycling section).
Neighborhood cars	Small, generally non-polluting vehicles suitable for short trips, that operate on streets and require less space to park.
TDM strategies	Provide incentives for use of alternatives to single-occupant vehicle use (see TDM section).
Land Use strategies	Improve accessibility; reduce the need to travel (see Land Use and Transportation section).



higher costs of goods and services, or taxes -- regardless of how many cars we own or how much we drive. This system of "bundling" parking costs with other goods and services lowers the out-of-pocket expenses of driving and makes other types of travel seem expensive by comparison. Research done throughout the nation suggests that when the real costs of parking are passed on directly to drivers, the demand for parking typically drops, and alternative modes of transportation, where available (such as transit, carpooling, walking, and bicycling) become more attractive and viable for certain trips.

To address parking and mobility problems comprehensively, strategies need to address the supply, management, and demand for spaces. Strategies including, but not limited to those listed on Table ME-3 may be tailored for specific applications as needed.

Policies

ME-G.1. Provide and manage parking so that it is reasonably available when and where it is needed.

- a. Where parking deficiencies exist, prepare parking master plans to inventory existing parking (public and private), identify appropriate solutions, and plan needed improvements.
- b. Implement strategies to address community parking problems using a mix of parking supply, management, and demand solutions, including but not limited to those described on Table ME-3.
- c. Recognize that parking demand is influenced by the users' (drivers) cost to park; consider the positive and negative implications of parking pricing when developing solutions to parking problems.



The Hillcrest Community Parking District

ME-G.2. Implement innovative and up-to-date parking regulations that address the vehicular and bicycle parking needs generated by development.



Mobility Element

- a. Adjust parking rates for development projects to take into consideration access to existing and funded transit with a base mid-day service frequency of ten to fifteen minutes, affordable housing parking needs, shared parking opportunities for mixed use development, and implementation of TDM plans.
- b. Strive to reduce the amount of land devoted to parking through measures such as parking structures, shared parking, mixed-use developments, and managed public parking (see ME-G.3), while still providing appropriate levels of parking.

ME-G.3. Manage parking spaces in the public rights-of-way to meet public need and improve investment of parking management revenue to benefit areas with most significant parking impacts.

- a. Continue and expand the use of Community Parking Districts (CPD). The CPDs can be formed by communities to implement plans and activities designed to alleviate parking impacts specific to the community's needs. The CPDs also improve the allocation and investment of parking management revenue by providing the Community Parking Districts with a portion of the revenue generated within their boundaries for the direct benefit of the district.
- b. Implement parking management tools that maximize on-street parking turnover, where appropriate.
- c. Judiciously limit or prohibit on-street parking where needed to improve safety, or to implement multi-modal facilities such as bikeways, transitways, and parkways.

ME-G.4. Support innovative programs and strategies that help to reduce the space required for, and the demand for parking, such as those identified in ME Section E, Transportation Demand Management.

H. Airports

Goals

- ◆ An air transportation system that fosters economic growth.
- ◆ Adequate capacity to serve the forecasted passenger and cargo needs at existing airports.
- ◆ An air transportation system that is integrated with a multi-modal surface transportation system that efficiently moves people and goods.
- ◆ An international airport to serve the region's long-term air transportation and economic needs.
- ◆ General aviation airport operations that support public safety, law enforcement, and aviation training activities and promote adjacent commercial and industrial uses.
- ◆ Military aviation installations that support national defense and the regional economic needs



Discussion

Civilian and military aviation play an important role in the regional air transportation system, economy, and national defense. These activities provide important jobs and contribute significantly to San Diego's economy. Airports located within and adjacent to the City of San Diego are listed on Table ME-4 and shown on Figure ME-3. Airport and land use compatibility is discussed in the Land Use Element Section G, and airport noise issues are discussed in the Noise Element Section D.

TABLE ME-4 Airports Within and Near the City of San Diego

Name	Uses
<i>Airports Within the City</i>	
San Diego International Airport – Lindbergh Field	Air Carrier, General Aviation
Brown Field - Municipal Airport	General Aviation, Military
Montgomery Field - Municipal Airport	General Aviation
Marine Corps Air Station Miramar	Military
<i>Airports Adjacent the City</i>	
Naval Air Station North Island	Military
Naval Outlying Field Imperial Beach	Military
Gillespie Field	General Aviation
Tijuana International Airport	Air Carrier

San Diego International Airport

San Diego International Airport (SDIA) at Lindbergh Field is the busiest single-runway airport in the nation. The San Diego County Regional Airport Authority has forecasted passenger traffic at SDIA to increase from 16 million passengers to 28 million annual passengers by 2030. This growth will result in capacity constraints by 2015. To meet this increasing air transportation demand, the SDIA Master Plan guides the development of SDIA through 2015 by addressing terminal conditions and capacity, and vehicle parking capacity, multi-modal ground connections, and access for passengers and cargo need.

Airport Site Selection

In recognition of long-term capacity constraints at SDIA, the San Diego County Regional Airport Authority is searching for a new airport site to address regional air transportation needs. Even upon selection, it could take up to fifteen years before a new international airport could begin flight operations. Depending upon the selected location, the City will coordinate land use and transportation planning decisions with the Airport Authority to serve the new airport.



THE CITY OF SAN DIEGO
General Plan
Mobility Element

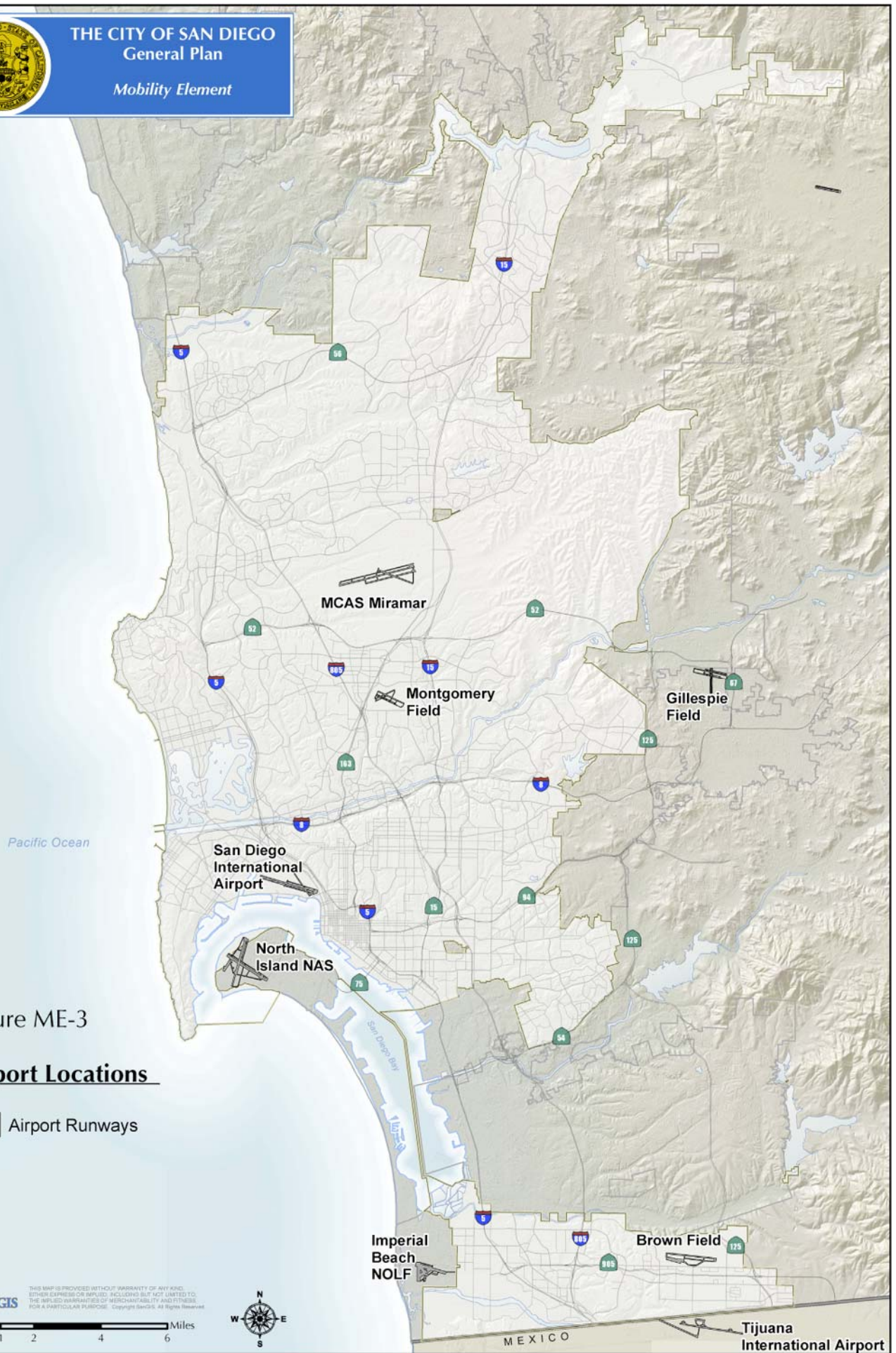


Figure ME-3

Airport Locations

 Airport Runways



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Municipal Airports

Brown Field and Montgomery Field municipal airports provide business, corporate, training, and charter aviation services that support commercial and industrial activities within the region. The airports have the potential to act as catalysts for future economic development by providing businesses the option to use charter air services. They serve as locations for public safety and law enforcement agencies to provide services to the region. Both airports help to relieve general aviation congestion at SDIA. Brown Field is a port of entry for private aircraft coming from Mexico.

Airport Master Plans help to identify the challenges and opportunities associated with development of aviation and aviation related activities, typically over a 20-year period. By identifying the facilities necessary to meet near and long-term aviation demand and providing guidelines for future aviation development, airport master plans help the City receive grant funding assistance from the Federal Aviation Administration (FAA) to maintain and improve airport operations.

Military Aviation Installations

Military aviation has had a long history in San Diego. Marine Corps Air Station (MCAS) Miramar and Naval Air Station (NAS) North Island are essential for national defense purposes. As part of the military's larger presences in the region, these installations help fuel our local economy.

MCAS Miramar serves as a critical location for Marine Corps fixed-wing and helicopter aircraft activities. Aircraft training includes touch and goes (takeoff and landings with a close-in circuit around the airport), aircraft carrier simulated landings, practice instrument approaches, and normal departures to, and arrivals from other installations or training areas. In response to concerns about noise and safety, the Marines have changed flight patterns and hours of operation and are updating Miramar's Air Installations Compatible Use Zones Study to address existing and projected aircraft operations.

Located in Coronado, NAS North Island is the only west coast installation that provides direct access from an aircraft carrier to an airfield. As a component of North Island, Naval Outlying Field Imperial Beach serves as an important location for naval helicopter training.

Airports Outside of the City

Commercial air carriers operate at the Tijuana International Airport in Mexico adjacent to the international border. In addition, general aviation aircraft operate at Gillespie Field in El Cajon.



Policies

- ME-H.1. Support the development and implementation of the SDIA Master Plan. The Master Plan addresses terminal conditions and capacity, vehicle parking capacity, multi-modal ground connections to terminal areas, and ground access needed to support the forecasted demand for passengers and cargo.
- ME-H.2. Support the regional planning and implementation of a long-range solution for a regional commercial air carrier airport that has the capacity to accommodate forecasted air passenger and cargo demands, and is designed with multi-modal ground connections to terminal areas.
- ME-H.3. Provide general aviation facilities at Montgomery Field and Brown Field in accordance with their respective airport master plans or layout plans, and Federal Aviation Administration requirements.
 - a. Accommodate forecasted general aviation demand within the limitations of federal, state, and local funding, user fees, and environmental constraints.
 - b. Seek federal and state funding assistance to develop, implement, and update Airport Master Plans, as needed, for Montgomery Field and Brown Field to support the forecasted demand for general aviation and public safety operations.
- ME-H.4. Support training and operation activities at military aviation installations that are essential for national defense and our local economy.

I. Passenger Rail

Goal

- ◆ Improved rail travel opportunities.

Discussion

Commuter, intercity and high-speed passenger rail services can help reduce demand on our freeways and at our airports by providing alternatives to auto and air travel for intercity trips. The Coaster and Amtrak trains provide passenger rail service to the City of San Diego along the coastal rail corridor. Passenger and freight trains also share the predominately single-track corridor (see Goods Movement/Freight section). The Coaster provides commuter rail service between Oceanside and downtown San Diego with stations in the city at Sorrento Valley, Old Town, and the Santa Fe Depot. Amtrak provides intercity passenger rail service from downtown San Diego to Los Angeles, and north to San Luis Obispo, which is the second most heavily traveled intercity passenger rail corridor in the nation.



The Regional Transportation Plan identifies projects that would provide improved rail service and performance, and would enable service frequency improvements for commuter and intercity passenger rail services. Specific projects include: double tracking of the coastal rail corridor and a tunnel under University City (including a new station), and service frequency improvements.

The California High-Speed Rail Authority has developed a plan for the construction, operation and financing of a statewide, intercity, 700-mile long high-speed passenger rail system capable of speeds in excess of 200 miles per hour on dedicated, fully separated tracks serving the major metropolitan centers of California. The network would provide intercity connections that would be competitive with air and auto travel options. This plan identifies two corridors that would connect San Diego to Los Angeles and Northern California: the coastal rail corridor with high-speed service to Orange County and conventional improvements south of Orange County to Los Angeles; and the I-15 inland corridor through Riverside and San Bernardino Counties connecting to Los Angeles.

Policies

- ME-I.1. Support commuter, intercity and high-speed passenger rail transportation projects that will provide travel options and improve the quality of service for intercity travel while minimizing impacts to communities.
- ME-I.2. Support intermodal stations to facilitate transfer of passengers between modes and expand the convenience, range, and usefulness of transportation systems implemented in the City.
- ME-I.3. Locate future stations adjacent to villages with high-density employment or residential uses.
- ME-I.4. Ensure that stations are well designed, contain amenities and are integrated into the community.
- ME-I.5. Support increased commuter and intercity passenger rail services.
- ME-I.6. Support a stable, multi-year transportation funding policy for passenger rail services that meets the goal of improved rail travel opportunities.



J. Goods Movement/Freight

Goal

- ◆ Safe and efficient movement of goods with minimum negative impacts.

Discussion

Virtually all of San Diego's goods are imported from outside the region. Additionally, San Diego's location in the far southwestern United States, historically at the "end-of-the-line," makes it even more significant for local, national, and international trade. The movement of goods in San Diego and the region is supported by an integrated intermodal freight infrastructure consisting of the use of trucks/roadways, rail/railroads, ports and maritime shipping, and air cargo/airports. We must optimize commercial goods movement to maintain and improve the San Diego region's economic competitiveness while minimizing potential negative impacts to our transportation system and neighborhoods. Figure ME-4 shows the location of major facilities that make up the metropolitan region's intermodal goods movement/freight system. Noise impacts that result from goods movement are discussed in the Noise Element Section B.



The overall intermodal freight system and infrastructure is owned and operated by public agencies and private businesses. While the system is intended to support the goods movement/freight requirements for the City of San Diego and the San Diego region, it is important to note that this infrastructure also supports San Diego's role in the nation's supply chain and business of trade. As a result, the majority of San Diego's freight passes through the City and region to other areas of the state, the nation, and to international destinations. International trade and goods movement is discussed in the Economic Prosperity Element Section I.

- **Trucks:** The majority of goods in the San Diego region are transported by trucks using state and interstate highways with access provided by regional arterials and local streets. In the San Diego region, Interstates 5 and 15 are the two major north-south corridors that accommodate significant volumes of commercial trucks, while I-8, State Routes 94/125, and SR 905/Otay



Mesa Road are the region's primary east-west truck corridors. These north-south and east-west corridors serve both domestic cargo as well as international trade. The City's arterials and major streets also carry significant volumes of trucks that serve local retail and commercial uses as well as local industry and business needs. City streets also allow for the transition of freight from the marine and air terminals to the major state and interstate corridors.

- **Freight Rail Service:** Freight rail service is operated by the Burlington Northern Santa Fe (BNSF) Railroad along the coastal rail corridor from San Diego to Los Angeles and points north and east. Freight service within this corridor is focused in the areas of auto trans-load service, lumber, fly ash, cement, and local freight service (east to Miramar and Escondido).

Freight is also transported between San Diego and Arizona via the San Diego & Arizona Eastern (SD&AE) railway (this service is operated by the Carrizo Gorge Railway). Rail traffic must pass through northern Mexico along this route before reaching Arizona. Freight movements in recent years have included agriculture and food products, steel and aluminum, liquefied petroleum gas, lumber, paper and building materials, transformers, generators and heavy machinery.

- **Maritime:** Activities in San Diego Bay and the adjoining tidelands are administered by the San Diego Unified Port District. Existing commercial shipping facilities include fresh fruit cargo facilities at the Tenth Avenue Marine Terminal, and lumber and automobile import and export facilities at the National City Marine Terminal. It should be noted that there are larger, more competitive, and better connected regional ports of Los Angeles to the north and Ensenada to the south. Further increases in trade and shipping in San Diego will necessitate further capital investment in ship and cargo facilities and improved rail and highway transfer facilities. Further expansion of the cruise terminal offers potential for even greater use as both a port-of-call, and a base for cruise ship operations. Economic Prosperity Element Sections H, I, and J contain additional information regarding maritime activities.
- **Air Cargo:** Most air cargo in the San Diego region is handled through San Diego International Airport, with a small percentage handled at general aviation airports. Airport recommendations are found in the Airports section of the element.

The following policy recommendations, together with the recommendations in the Economic Prosperity Element, support the needs of existing and expanding business and industry while protecting general mobility and neighborhood quality of life.

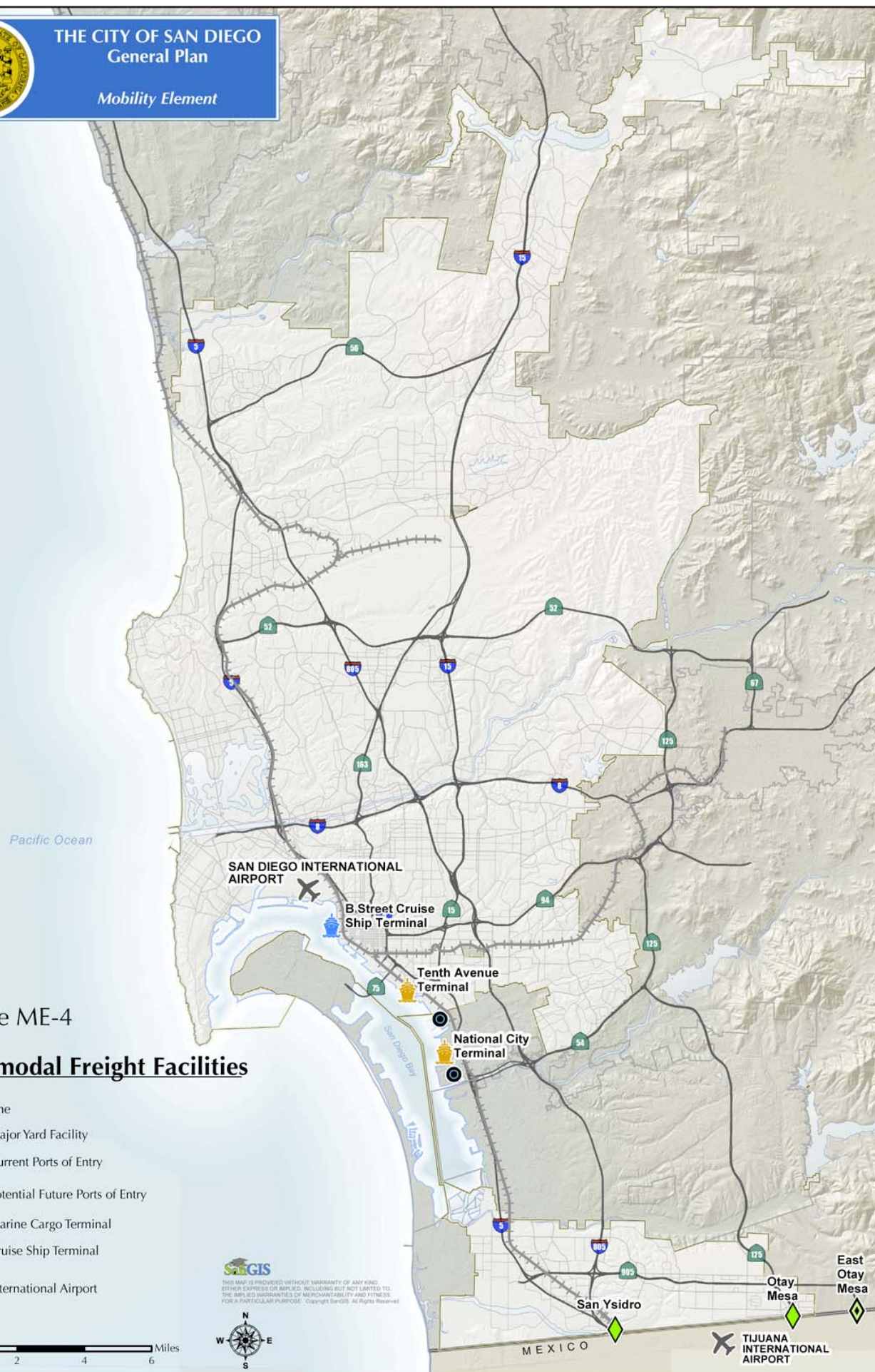


Figure ME-4

Intermodal Freight Facilities



Policies

- ME-J.1. Support infrastructure improvements and use of emerging technologies that will facilitate the clearance, timely movement, and security of domestic and international trade, including facilities for the efficient intermodal transfer of goods between truck, rail, marine, and air transportation modes.
- ME-J.2. Preserve property for planned roadway and railroad rights-of-way, marine and air terminals, and other needed transportation facilities.
- ME-J.3. Support measures to alleviate on-street truck parking and staging and peak period truck usage on freeways. These measures may include, but are not limited to: designating off-street truck staging areas; shared use of park-and-ride lots; and shared use of other public and private parking lots where appropriate.
- ME-J.4. Implement measures to minimize the impacts of truck traffic, deliveries, and staging in residential and mixed-use neighborhoods.
- ME-J.5. Support alternatives to transporting hazardous materials by truck.
- ME-J.6. Support improvement of inter-regional freight service between San Diego and the rest of the continent.
- ME-J.7. Support preparation and implementation of plans, in cooperation with railroad operators and owners, for providing freight service to major industrial areas in San Diego.
- ME-J.8. Work with the San Diego Unified Port District and SANDAG to maximize potential economic and mobility benefits to the San Diego region.
- ME-J.9. Support efforts that facilitate the efficient movement of goods across the U.S.-Mexico Border (see also Economic Prosperity Element Section J).

K. Regional Coordination and Financing

Goals

- ◆ An objective process for prioritization of transportation projects.
- ◆ Effective representation of City of San Diego interests in SANDAG decisions.
- ◆ Assured revenues to cover the costs of constructing, operating, and maintaining transportation facilities and providing needed transportation services.



Discussion

Transportation funding sources and strategies, and a process for prioritization must be in place to assure that needed transportation facilities will be provided in a manner that supports General Plan policies. Because jobs, homes, and stores are linked by transportation corridors that cross City boundaries, major transportation funding decisions occur at the regional, rather than the City level. In the San Diego region, SANDAG, with participation from all 18 cities and the county, is mandated to make those decisions.

The 2030 RTP recommends implementation of a \$42 billion transportation improvement plan that would be funded by a "Reasonably Expected Revenue" scenario. Local, state, and federal revenue sources are identified, and actions are recommended to obtain the revenues necessary to implement the RTP-planned improvements. The "Reasonably Expected Revenue" scenario includes TransNet revenues. TransNet is the region's half-cent local sales tax for transportation, originally approved by the voters in 1987, and reauthorized in 2004 to continue through 2048. More than half of the future expenditures identified in the RTP are earmarked for capital expenditures. The remainder is set aside for operating and maintenance costs. The RTP identifies revenue sources and estimated transportation project costs.

SANDAG sets priorities for allocating transportation funding based upon the following seven target areas: 1) implement the adopted RTP 2030 Mobility Network in an efficient and cost-effective manner; 2) enhance transportation systems by improving connectivity between inter-related modes of transportation; 3) provide adequate funding to meet both the capital, and operational and maintenance needs of our transportation systems; 4) facilitate coordination through subregional planning among jurisdictions where corridors cross jurisdictional boundaries; 5) consider regional and local mobility objectives in planning and approving new land uses; 6) design development to reduce auto dependency; and 7) align the timing of related transportation and land use development. These target areas were adopted by the region as a part of the Regional Comprehensive Plan (RCP).

The City of San Diego exercises additional discretion in transportation financing through allocation of locally controlled funds for the maintenance, management, and operation of streets and the management of Capital Improvements Program (CIP), Facilities Benefit Assessments (FBA), and Development Impact Fee (DIF) programs (see the Public Facilities Element for more discussion on these programs). In addition, the City uses TransNet revenues and available grant funding, such as Community Development Block Grants, Safe Routes to Schools, and Transportation Development Act grants to fund improvements. At the community level, communities have initiated Maintenance Assessment Districts to fund higher levels of maintenance services on local streets such as pedestrian lighting and landscaping.

The funding of necessary improvements to our transportation system is a major challenge. The reauthorization of TransNet and the implementation of the RTP will result in a more extensive and multi-modal regional transportation system. However, there are still many desired projects that are unfunded, such as neighborhood-based transit service (circulators and shuttles). The



Public Facilities Element provides policies for public facilities financing, prioritization, and evaluation of new growth that apply to transportation projects. The Public Facilities Element policies, combined with those listed below, are designed to: provide guidance for the prioritization of projects; position San Diego to compete for available transportation funding; to pursue new funding sources; to maximize the use of funding obtained; and to guide the funding of improvement projects to best meet General Plan goals.

Policies

Prioritization

- ME-K.1. Identify and prioritize transportation improvement projects for inclusion in the City of San Diego's annual Capital Improvements Program (CIP) and to guide the City's applications for regional, state or federal funds, in accordance with Public Facilities Element Policy PF.B.3.
- ME-K.2. Take a leadership role in efforts to increase transportation funding to benefit areas that have the strongest commitment to locating or maintaining higher densities/intensities in areas served by existing or planned transit.
- ME-K.3. Work with SANDAG to increase the share of regional funding (over the 2030 RTP levels) allocated to pedestrian, bicycle, and transportation systems management projects.

Provision of Transportation Facilities with Growth

- ME-K.4. Determine necessary transportation improvements to serve new development at the community plan level, and where necessary, at the project level.
- ME-K.5. Require the dedication and/or improvement of transportation facilities in conjunction with the subdivision of land, negotiated development agreements, discretionary permits, and facilities financing plans.
- ME-K.6. Require development proposals to provide a mix of multi-modal transportation facilities, where needed, in accordance with the policies established in the Public Facilities Element Section C, Evaluation of Growth, Facilities, and Services.